

### ABSTRACT

A new method is provided to provide the underfill for flip-chip semiconductor devices. An IC chip is provided with solder bumps. The flip-chip is inserted into a cavity, the heatsink forms the top of the cavity, a IC substrate forms the bottom of the cavity. The cavity  
5 is filled with a molding compound. This molding compound is forced around and under the IC chip, surrounding the IC chip including the area below the IC chip.